

1 WHAT IS CLAIMED IS:

1 1. A whetstone pellet, which is fixed multiple on a  
2 pedestal to form a whetstone, comprising  
3 a columnar base body to be fixed to the pedestal, and  
4 a plated layer formed on a surface of the base body,  
5 wherein said plated layer contains abrasive grains.

1 2. A whetstone pellet according to claim 1, wherein,  
2 said plated layer is an amorphous plated layer.

1 3. A whetstone pellet according to claim 2, wherein,  
2 said base body is made of a metal that functions as  
3 a catalyst upon forming said amorphous plated layer.

1 4. A process for producing a whetstone pellet, a plurality  
2 of which is fixed on a pedestal to form a whetstone, comprising  
3 steps of:

4 preparing plural columnar base bodies to be fixed on  
5 said pedestal, and

6 forming an abrasive grain layer with a plating solution  
7 containing abrasive grains on end surfaces of the columnar  
8 base bodies, which are opposite to the end surface to be  
9 fixed to said pedestal.

1 5. A process for producing a whetstone pellet according  
 2 to claim 4, wherein,  
 3 said plural base bodies are fixed on a fixing plate,  
 4 a catalyst layer for electroless plating is formed on  
 5 end surfaces of said base bodies opposite to end surfaces  
 6 to be fixed to said fixing plate before or after fixing said  
 7 plural base bodies on said fixing plate, and  
 8 said plural base bodies fixed on the fixing plate are  
 9 immersed in an electroless plating solution containing  
 10 abrasive grains to form abrasive grain layers on said catalyst  
 11 layers of said base bodies.

1 6. A process for producing a whetstone pellet according  
 2 to claim 5, wherein,  
 3 a masking agent is applied to a surface of said fixing  
 4 plate, before immersing said plural base bodies in said  
 5 electroless plating solution, to fix the end surfaces of  
 6 said plural base bodies to said fixing plate with said masking  
 7 agent as an adhesive, and said masking agent is applied to  
 8 the surface of said plural base bodies, on which said abrasive  
 9 grain layers are not formed.

1 7. A process for producing a whetstone pellet according  
 2 to claim 4, wherein,  
 3 after forming said abrasive grain layer on each said

NK173202(US)

4 base body, said abrasive grain layer is processed to  
5 uniformize thickness of said abrasive grain layers.

1 8. A whetstone having plural abrasive grain layers dotting  
2 a pedestal, comprising:

3 plural columnar base bodies fixed to said pedestal,  
4 and

5 abrasive grain containing-plated layers containing  
6 abrasive grains, that function as said abrasive grain layers,  
7 formed only on surfaces of said base bodies including end  
8 surfaces of said base bodies.

1 9. A whetstone according to claim 8, wherein,  
2 said plated layer is an amorphous plated layer.

1 10. A process for producing a whetstone having plural  
2 abrasive grain layers dotting a pedestal, comprising steps  
3 of:

4 preparing said pedestal and plural columnar base bodies  
5 to be fixed on said pedestal,

6 fixing said plural base bodies on a surface of said  
7 pedestal, on which said base bodies are to be fixed, and

8 forming said abrasive grain layers on at least end  
9 surfaces of said base bodies with a plating solution  
10 containing abrasive grains.

NK173202(US)

1 11. A process for producing a whetstone according to claim  
2 10, wherein,  
3 after forming said abrasive grain layers on the end  
4 surfaces of said plural base bodies, said plural abrasive  
5 layers are processed, so that a plane shape formed by  
6 continuation of surfaces of said plural abrasive grain layers  
7 has an inverse shape of an objective surface to be processed.

1 12. A process for producing a whetstone which comprises  
2 steps of fixing plural base bodies on a pedestal, and forming  
3 abrasive grain layers on end surfaces of the base bodies,  
4 comprising a step of:  
5 processing said end surfaces of the base bodies so that  
6 a plane shape formed by continuation of the end surfaces  
7 of said plural base bodies fixed on said pedestal has an  
8 inverse shape of an objective surface to be processed.

1 13. A process for producing an optical element, comprising  
2 steps of:  
3 preparing a whetstone in which base bodies are fixed  
4 on a pedestal, and plated layers containing abrasive grains  
5 are formed only on surfaces of the base bodies including  
6 end surfaces of the base bodies, and  
7 processing a raw material of an optical element by using  
8 the whetstone to form the optical element or an intermediate

9 product of the optical element.

1 14. A process for producing an optical element according  
2 to claim 13, wherein,  
3 said plated layers are amorphous plated layers.

1 15. A process for producing an optical element according  
2 to claim 13, wherein,  
3 insaidprocessingstepoftherawmaterialofanoptical  
4 element, a grinding process and a polishing process, which  
5 is to be carried out after said grinding process, are carried  
6 out, and  
7 insaidgrindingprocess, therawmaterialofanoptical  
8 element is ground by using the whetstone.

1 16. A process for producing an optical element according  
2 to claim 13, wherein,  
3 said raw material of an optical element is fluorite.

1 17. A process for producing a exposure apparatus equipped  
2 with an optical system including a lens, comprising steps  
3 of:  
4 preparing a whetstone in which plural base bodies are  
5 fixed on a pedestal, and plated layers containing abrasive  
6 grains are formed only on surfaces of the base bodies

NK173202(US)

7 including end surfaces of the base bodies,  
8 processing a raw material of a lens by using the  
9 whetstone to form the lens or an intermediate product of  
10 the lens, and

11 installing the lens obtained by processing the raw  
12 material of a lens into the optical system.

1 18. A process for producing a exposure apparatus according  
2 to claim 17, wherein,  
3 said plated layers of the whetstone are amorphous  
4 plated layers.

1 19. A process for producing a exposure apparatus according  
2 to claim 17, wherein,  
3 said raw material of a lens is fluorite.